MODIS TECHNICAL TEAM MEETING

June 27, 1996

The MODIS Technical Team Meeting was chaired by Vince Salomonson. Present were David Herring, Steve Ungar, Bill Barnes, Harry Montgomery, Bruce Guenther, Ed Masuoka, Al Fleig, Paul Chan, Yoram Kaufman, Locke Stuart, Dorothy Hall, and Dick Weber.

1.0 SCHEDULE OF EVENTS

July 9 - 10	EOS Calibration Panel at GSFC
July 11 - 12	MODLAND-SDST Meeting at GSFC
July 15	**Semi-Annual Reports due to Barbara Conboy**
July 17 - 18	Atmosphere Discipline Group Meeting in Chincoteague, VA
Aug. 16	Revised ATBDs due to the EOS Project Science Office
Oct. 8	MODIS Calibration Working Group at GSFC
Oct. 9 - 11	MODIS Science Team Meeting at GSFC

2.0 MINUTES OF THE MEETING

2.1 MODIS Project Reports

Barnes announced that SBRS will begin testing on the Protoflight Model (PFM), using the Engineering Model (EM) electronics, within the next week. Additionally, he reported, the EM electronics have been refurbished and are ready for connection.

2.1.1 ÒThe MODIS PlanÓ

According to Barnes, Lee Tessmer, of Hughes, is developing a planÑcalled ÒThe MODIS PlanÓÑthat discusses plans for building three MODIS instruments for the contract price NASA now has. In order to do that, the plan presents the option for removing the SRCA and SDSM from Flight Models 1 and 2, so that those calibration instruments would only fly onboard the EOS AM-1 MODIS. Barnes stated that this option is being discussed and a decision has not yet been made. However, Weber feels that the decision must be made soon.

Barnes pointed out that an alternative is to cancel the building of MODIS Flight Model 2 by Oct. 1, 1996, and receive only the PFM and Flight Model 1 with the full complement of instruments on board both. Salomonson observed that another option is to keep the SDSM and delete the SRCA.

A lively discussion ensued. Salomonson concluded that he is personally biased toward two full-up MODIS instruments, rather than three partial ones. He proffered that the AM-2 MODIS instrument should logically be a step beyond the

AM-1 and PM-1 MODIS instruments in terms of technological sophistication. A back off position could be to fly the SDSM on FM 1 and FM 2, but leave the SRCA off of both. Salomonson feels that to rely solely on the moon without the SDSM is scary.

2.2 MCST Reports

Guenther reported that two MCST personnel are at SBRS this week to help write the MODIS testing software. Next week, MCST will begin preparing a longer term, more detailed plan for MCSTÕs support of SBRS. Guenther stated that travel funds are a concern right now for Barnes and himself. He feels that at least one of them should remain at SBRS through the end of August to watch the testing. Their presence will render SBRS better able to make important decisions on the spot without communication delay.

2.2.1 Geolocation Concern

Guenther reported that MCST recently discovered that the geolocation artifacts found in the EM electronics will also be present on the Flight Model-1 electronics. He explained that the integration time of a 1-km pixel is 333 microseconds and takes 10 microseconds to read out. Then, when the instrument steps down to the 500-m and 250-m bands, SBRS forgot or were unable to take into account the 10 microsecond readout time on the smaller bands. Guenther stated that for the 250-m and 500-m bands, full integration will not have been completed on the second sample (500-m bands) or the second and fourth samples (250-m bands) by the end of the allowed 333 microseconds and that the actual location of each of these samples will be slightly shifted from its anticipated location.

Fleig asked if MCST plans to remove this effect when calibrating the data. Guenther responded that MCST will produce the correct radiometry. He just wants the Science Team to be aware that it cannot believe that the 250-m bands and the 500-m bands are uniformly spaced.

Kaufman asked if this centroid shift will affect the signal-to-noise ratio. Guenther answered affirmatively, but stated that the effect will not be significant.

2.3 SDST Reports

Masuoka announced that ECS Project has released its Tiger Team report on bringing down the total increase for EOS Release B software. The bottom line is the Tiger Team saved about 30 percent of the 52 percent increase. Masuoka observed that 8 of the remaining 22 percent is due to increases in the MODIS software. He also stated that one area of concern facing MODIS is reducing its main memory process requirement by about halfÑ124 Mb per processor will be reduced to 64 Mb. {Ed, please double check this!} The ECS hopes to resolve this issue so that it can begin buying hardware in July.

Masuoka told the Team that in April 1997 the ECS will have received enough MODIS software to test the algorithms in their system. He said that SDST will

work with ECS to troubleshoot their system as they build it. Specifically, Masuoka wants to ensure that ECS buys enough of each piece of their system to do integration testing.

Masuoka reminded the Team that he sent around an e-mail discussing detector ordering on Level 1B scan data. {Ed, I had difficulty following the discussion here. Can you help clarify the issue(s)?}

2.4 GSFC DAAC Reports

Chan reported that the GSFC DAAC is also working with ECS on several problems. For example, metadata management software is lacking. Currently, there is metadata management software for TRMM, but not for MODIS.

Regarding integration and testing of beta code, Chan reported that two PGS files from the ocean test data are causing problems. He said he understands that SDST issued some guidelines on big files and so the GSFC DAAC plans to go back and review how the Ocean Group is following those guidelines to address the problems. Chan stated that there are no show stoppers in the Atmosphere and Land GroupsÕ code.

2.5 MAST Reports

Stuart reported that it appears that the MODIS Team has a carryover problem, which is pursuing in collaboration with Teresa Mautino. Stuart plans to notify team members individually as he discovers problems.

2.6 New Idea for Attitude Knowledge Correction

Ungar proposed using lunar looks as a means for determining pointing accuracy for MODIS when in orbit. {Steve, please explain your idea, as I didnÕt fully understand it.}

2.7 EO-1 Science Advisory Team Meeting

Ungar gave a brief overview of the EO-1 (Earth Orbiter-1) SAT Meeting held earlier this week at GSFC. He observed that NASAÕs new philosophy to launch payloads into space that are better, faster, and cheaper is not always possible. But, he stated, there are some exciting new technologies that will allow us to make some remote sensing observations as never before. He suggested the possibility of flying EO-1 in formation with EOS AM-1 and Landsat-7 to help validate data from sensors on those platforms.

Ungar stated that within the New Millennium Program, engineers are reaching a new level of scientific insight as to why we need better instrument capabilities, and are striving to design these capabilities into the next generation of Earth remote sensors.

Ungar noted that he is particularly interested in participation by a representative from MODLAND in the EO-1 SATÕs next three meetings to be held before it disbands in December 1997.

3.0 ACTION ITEMS

3.1 New Action Items

1. *Herring:* Review the schedules for the MODLAND workshop in August and the ATBD reviews in November to ensure that there is adequate time to revise ATBDs after each event.

3.2 Action Items Carried Forward

2. *Herring*: invite a representative from the VIRS Team to attend the next MODIS Science Team Meeting to present an overview of their instrument, explain their data processing chain, and discuss how they are gridding their data.
3. *Guenther:* Forward copies of the SBRS test schedule to the Science Team as soon as it is available.